

**WHAT IS CLAIMED IS:**

- 1           1.     A method of optimizing switched diversity comprising:  
2                     determining a rate of change of strength values of a received signal  
3     of a first branch as a function of time;  
4                     comparing a magnitude of the rate of change to a threshold; and  
5                     switching to a second branch in response to a determination that the  
6     magnitude of the rate of change exceeds the threshold.
- 1           2.     The method of claim 1 wherein each branch comprises a carrier.
- 1           3.     The method of claim 1 wherein each branch comprises an antenna.
- 1           4.     The method of claim 2 wherein the step of determining comprises  
2     using a received-signal-strength indicator (RSSI).
- 1           5.     The method of claim 4 wherein the step of determining comprises  
2     comparing a current-packet RSSI to an RSSI of an earlier-received packet.
- 1           6.     The method of claim 4 wherein the step of determining comprises  
2     estimating a time derivative of the RSSI by calculating an RSSI moving average.

1           7.     The method of claim 2 wherein the threshold is a function of  
2 modulation and coding.

1           8.     The method of claim 3 wherein the step of determining comprises  
2 using a received-signal-strength indicator (RSSI).

1           9.     The method of claim 8 wherein the step of determining comprises  
2 comparing a current-packet RSSI to an RSSI of an earlier-received packet.

1           10.    The method of claim 8 wherein the step of determining comprises  
2 estimating a time derivative of the RSSI by calculating an RSSI moving average.

1           11.    The method of claim 3 wherein the threshold is a function of  
2 modulation and coding.

1           12.    A method of optimizing switched diversity comprising:  
2                   determining a rate of change of strength values of a received signal  
3   of a first branch operating at a first modulation scheme as a function of time;  
4                   comparing a magnitude of the rate of change to a threshold; and  
5                   switching to a second, more robust, modulation scheme in response  
6   to a determination that the magnitude of the rate of change exceeds the threshold.

1           13.    The method of claim 12 wherein each branch comprises a carrier.

1           14.    The method of claim 12 wherein each branch comprises an antenna.

1           15.    The method of claim 13 wherein the step of determining comprises  
2   using a received-signal-strength indicator (RSSI).

1           16.    The method of claim 15 wherein the step of determining comprises  
2   estimating a time derivative of the RSSI by calculating an RSSI moving average.

1           17.    The method of claim 13 wherein the step of determining comprises  
2   comparing a current-packet RSSI to an RSSI of an earlier-received packet.

1           18.    The method of claim 13 wherein the threshold is a function of  
2   modulation and coding.

1            19.    The method of claim 14 wherein the step of determining comprises  
2    using a received-signal-strength indicator (RSSI).

1            20.    The method of claim 19 wherein the step of determining comprises  
2    estimating a time derivative of the RSSI by calculating an RSSI moving average.

1            21.    The method of claim 14 wherein the step of determining comprises  
2    comparing a current-packet RSSI to an RSSI of an earlier-received packet.

1            22.    The method of claim 14 wherein the threshold is a function of  
2    modulation and coding.

1           23.    An apparatus for optimizing switched diversity comprising:  
2                    means for determining a rate of change of strength values of a  
3   received signal of a first branch as a function of time;  
4                    means for comparing a magnitude of the rate of change to a threshold;  
5   and  
6                    means for switching to a second branch in response to a determination  
7   that the magnitude of the rate of change exceeds the threshold.

1           24.    The apparatus of claim 23 wherein each branch comprises an antenna.

1           25.    The apparatus of claim 23 wherein each branch comprises a carrier.

1           26.    The apparatus of claim 24 wherein the means for determining  
2   comprises use of a received-signal-strength indicator (RSSI).

1           27.    The apparatus of claim 26 wherein the means for determining  
2   comprises comparison of a current-packet RSSI to an RSSI of an earlier-received  
3   packet.

1           28.   The apparatus of claim 26 wherein the means for determining  
2   comprises estimation of a time derivative of the RSSI by calculating an RSSI  
3   moving average.

1           29.   The apparatus of claim 24 wherein the threshold is a function of  
2   modulation and coding.

1           30.   The apparatus of claim 25 wherein the means for determining  
2   comprises use of a received-signal-strength indicator (RSSI).

1           31.   The apparatus of claim 30 wherein the means for determining  
2   comprises comparison of a current-packet RSSI to an RSSI of an earlier-received  
3   packet.

1           32.   The apparatus of claim 30 wherein the means for determining  
2   comprises estimation of a time derivative of the RSSI by calculating an RSSI  
3   moving average.

1           33.   The apparatus of claim 25 wherein the threshold is a function of  
2   modulation and coding.

1           34.   A method of optimizing switched diversity comprising:

2                   determining a rate of change of strength values of a received signal  
3                   of a first branch operating at a first coding scheme as a function of time;  
4                   comparing a magnitude of the rate of change to a threshold; and  
5                   switching to a second, more robust, coding scheme in response to a  
6                   determination that the magnitude of the rate of change exceeds the threshold.

1                   35.    The method of claim 34 wherein each branch comprises a carrier.

1                   36.    The method of claim 34 wherein each branch comprises an antenna.

1                   37.    The method of claim 35 wherein the step of determining comprises  
2                   using a received-signal-strength indicator (RSSI).

1                   38.    The method of claim 37 wherein the step of determining comprises  
2                   estimating a time derivative of the RSSI by calculating an RSSI moving average.

1                   39.    The method of claim 38 wherein the step of determining comprises  
2                   comparing a current-packet RSSI to an RSSI of an earlier-received packet.

1                   40.    The method of claim 35 wherein the threshold is a function of  
2                   modulation and coding.

1           41.    The method of claim 36 wherein the step of determining comprises  
2    using a received-signal-strength indicator (RSSI).

1           42.    The method of claim 41 wherein the step of determining comprises  
2    estimating a time derivative of the RSSI by calculating an RSSI moving average.

1           43.    The method of claim 36 wherein the step of determining comprises  
2    comparing a current-packet RSSI to an RSSI of an earlier-received packet.

1           44.    The method of claim 36 wherein the threshold is a function of  
2    modulation and coding.



- 1           45.    An apparatus for optimizing switched diversity comprising:  
2                    means for determining a rate of change of strength values of a  
3   received signal of a first branch operating at a first modulation scheme as a function  
4   of time;  
5                    means for comparing a magnitude of the rate of change to a threshold;  
6   and  
7                    means for switching to a second, more robust, modulation scheme in  
8   response to a determination that the magnitude of the rate of change exceeds the  
9   threshold.
- 1           46.    The apparatus of claim 45 wherein each branch comprises a carrier.
- 1           47.    The apparatus of claim 45 wherein each branch comprises an antenna.
- 1           48.    The apparatus of claim 46 wherein the means for determining uses a  
2   received-signal-strength indicator (RSSI).
- 1           49.    The apparatus of claim 48 wherein the means for determining  
2   estimates a time derivative of the RSSI by calculating an RSSI moving average.

1           50.    The apparatus of claim 46 wherein the means for determining  
2           compares a current-packet RSSI to an RSSI of an earlier-received packet.

1           51.    The apparatus of claim 46 wherein the threshold is a function of  
2           modulation and coding.

1           52.    The apparatus of claim 47 wherein the means for determining uses a  
2           received-signal-strength indicator (RSSI).

1           53.    The apparatus of claim 52 wherein the means for determining  
2           estimates a time derivative of the RSSI by calculating an RSSI moving average.

1           54.    The apparatus of claim 47 wherein the means for determining  
2           compares a current-packet RSSI to an RSSI of an earlier-received packet.

1           55.    The apparatus of claim 47 wherein the threshold is a function of  
2           modulation and coding.

- 1           56.    An apparatus for optimizing switched diversity comprising:  
2                    means for determining a rate of change of strength values of a  
3   received signal of a first branch operating at a first coding scheme as a function of  
4   time;  
5                    means for comparing a magnitude of the rate of change to a threshold;  
6   and  
7                    means for switching to a second, more robust, coding scheme in  
8   response to a determination that the magnitude of the rate of change exceeds the  
9   threshold.
- 1           57.    The apparatus of claim 56 wherein each branch comprises a carrier.
- 1           58.    The apparatus of claim 56 wherein each branch comprises an antenna.
- 1           59.    The apparatus of claim 57 wherein the means for determining uses a  
2   received-signal-strength indicator (RSSI).
- 1           60.    The apparatus of claim 59 wherein the means for determining  
2   estimates a time derivative of the RSSI by calculating an RSSI moving average.
- 1           61.    The apparatus of claim 57 wherein the means for determining  
2   compares a current-packet RSSI to an RSSI of an earlier-received packet.

1           62.    The apparatus of claim 57 wherein the threshold is a function of  
2   modulation and coding.

1           63.    The apparatus of claim 58 wherein the means for determining uses a  
2   received-signal-strength indicator (RSSI).

1           64.    The apparatus of claim 63 wherein the means for determining  
2   estimates a time derivative of the RSSI by calculating an RSSI moving average.

1           65.    The apparatus of claim 58 wherein the means for determining  
2   compares a current-packet RSSI to an RSSI of an earlier-received packet.

1           66.    The apparatus of claim 58 wherein the threshold is a function of  
2   modulation and coding.